



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-----------------|-------------|----------------------|---------------------|------------------|
| 09/763,194      | 02/20/2001  | Kazunobu Fujikawa    | Q63075              | 3832             |

7590 07/03/2007  
SUGHRUE, MION, ZINN,  
MACPEAK & SEAS  
2100 Pennsylvania Avenue NW  
Washington, DC 20037

|          |
|----------|
| EXAMINER |
|----------|

ELVE, MARIA ALEXANDRA

|          |              |
|----------|--------------|
| ART UNIT | PAPER NUMBER |
|----------|--------------|

1725

|           |               |
|-----------|---------------|
| MAIL DATE | DELIVERY MODE |
|-----------|---------------|

07/03/2007

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

|                              |                        |                     |  |
|------------------------------|------------------------|---------------------|--|
| <b>Office Action Summary</b> | <b>Application No.</b> | <b>Applicant(s)</b> |  |
|                              | 09/763,194             | FUJIKAWA ET AL.     |  |
|                              | <b>Examiner</b>        | <b>Art Unit</b>     |  |
|                              | M. Alexandra Elve      | 1725                |  |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 14 July 2003.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 6 and 8-10 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 6 and 8-10 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 20 February 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                                | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                       | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

### **DETAILED ACTION**

*The indicated allowability of claims 7-8 & 10 is withdrawn in view of the newly discovered reference(s). Rejections based on the newly cited reference(s) follow.*

#### ***Claim Objections***

Claim 8 is objected to because of the following informalities: claim 8 depends on itself. Appropriate correction is required. For purposes of examination the examiner has assumed that the dependency is a typographical error and that claim 8 actually depends on claim 6.

#### ***Claim Rejections - 35 USC § 112***

Claims 6, 8-10 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Applicant states the limitation: "raw". This is a broad description that lacks substantial features hence the claims are indefinite.

#### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 6 & 8-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Inoue (USPN 4,448,655) in view of Bonga (USPN 4,645,894) and Inoue (USPN 4,506,133).

Inoue ('655) disclose an EDM apparatus having a supply spool (5) of erosion wire and a numeric controller, which determines the feed path and machining. The wires have a rugged peripheral surface along the length with projections and recesses. The wires may be twisted, braided or interlaced and have a spiral configuration (spiral groove) (see figures 3-7). In addition the wires may be plated, powder atomized and so forth. Wires made of copper, brass and steel are disclosed.

Inoue ('655) does not teach the use of a wire feeder (changer) or the reforming layer on the workpiece.

Bonga discloses an EDM wire changer having a spool supply for multiple wire types and a controller and feeding mechanism. The wires may be molybdenum, copper or bronze.

It would have been obvious to one of ordinary skill in the art at the time of the invention to use a wire feeder/changer as taught by Bonga in the Inoue ('655) apparatus because it allows rapid wire change during machining and hence decreases manufacturing time.

Inoue ('426) discloses EDM for surface treatment. The EDM apparatus is used to for a hardened or deposition coating on a workpiece.

It would have been obvious to one of ordinary skill in the art at the time of the invention to use EDM to surface treat a workpiece, by deposition as taught by Inoue

('426) in the Inoue ('655) apparatus because it is a common function of an EDM apparatus.

A recitation of the intended use of the claimed invention must result in a structural difference between the claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior art. If the prior art structure is capable of performing the intended use, then it meets the claim.

Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over Inoue ('655), Bonga, and Inoue (USPN 4,506,133) or Inoue (3,727,489).

Inoue ('655) disclose an EDM apparatus having a supply spool (5) of erosion wire and a numeric controller, which determines the feed path and machining. The wires have a rugged peripheral surface along the length with projections and recesses. The wires may be twisted, braided or interlaced and have a spiral configuration (spiral groove) (see figures 3-7). In addition the wires may be plated, powder atomized and so forth. wires made of copper, brass and steel are disclosed.

Inoue ('655) does not teach the use of a wire feeder (changer) or machining and deposition in combination.

Bonga discloses an EDM wire changer having a spool supply for multiple wire types and a controller and feeding mechanism. The wires may be molybdenum, copper or bronze.

It would have been obvious to one of ordinary skill in the art at the time of the invention to use a wire feeder/changer as taught by Bonga in the Inoue ('655) apparatus

Art Unit: 1725

because it allows rapid wire change during machining and hence decreases manufacturing time.

Inoue ('133) discloses the use of EDM to machine and deposition material in order to rebalance a workpiece.

It would have been obvious to one of ordinary skill in the art at the time of the invention to use the machining and deposition function as taught by Inoue ('133) in the Inoue ('655) apparatus because it is a common function of an EDM apparatus.

Inoue ('489) discloses a die making process whereby the EDM is used for coating and machining/coating.

It would have been obvious to one of ordinary skill in the art at the time of the invention to use the machining and deposition as taught by Inoue ('489) in the Inoue ('655) apparatus because it is a common function of an EDM apparatus.

### ***Response to Arguments***

Applicant's arguments with respect to claims have been considered but are moot in view of the new ground(s) of rejection.


**Conclusion**

Any inquiry concerning this communication or earlier communications from the examiner should be directed to M. Alexandra Elve whose telephone number is 571-272-1173. The examiner can normally be reached on 6:30-3:00 Monday to Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jonathan Johnson can be reached on 571-272-1177. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

June 29, 2007.

  
M. Alexandra Elve  
Primary Examiner 1725